WHAT IS CLAIMED IS:

1. (Currently Amended) A method to identify a modulation format of a data frame received from a servicing base station by a wireless terminal in a cellular wireless communication system, the method comprises:

receiving a first Radio Frequency (RF) burst of the data frame from the servicing base station, wherein the first RF burst carries a plurality of modulated symbols;

extracting a training sequence from the first RF burst, wherein the training sequence comprises modulated symbols;

processing the training sequence assuming a first modulation format to produce a first channel energy;

processing the training sequence assuming a second modulation format to produce a second channel energy;

determining a greater channel energy from the first channel energy and the second channel energy; ~~and~~

~~identifying the modulation format of the first RF burst as corresponding to the greater channel energy.~~

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

processing the training sequence assuming the first modulation format to produce a subsequent first channel energy;

accumulating the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;

processing the training sequence assuming the second modulation format to produce a subsequent second channel energy;

accumulating the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;

determining a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy; and

identifying the modulation format of the data frame as corresponding to the greater accumulated channel energy.

2. (Currently Amended) The method of Claim 1, wherein:

processing the training sequence(s) assuming the first modulation format to produce the first channel energy further comprises derotating the symbols within the training sequence; and

processing the training sequence(s) assuming the second modulation format to produce the second channel energy further comprises derotating the symbols within the training sequence.

3. (Original) The method of Claim 2, wherein:

the first modulation format is GMSK; and

the second modulation format is 8PSK.

4. (Currently Amended) The method of Claim 1, wherein extracting the training sequence, ~~from the first RF burst~~ further comprises:

processing the first RF burst to produce a baseband signal; and

extracting the training sequence from the baseband signal.

5. (Currently Amended) The method of Claim 1, further comprising:

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols ;

identifying a modulation format of the subsequent RF burst based on accumulated channel energies;

comparing the identified modulation format of the subsequent RF burst to the identified modulation format of previous RF bursts of the data frame; and

reprocessing the prior RF bursts of the data frame when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of prior RF bursts.

6. (Currently Amended) The method of Claim 1~~5~~, further comprising:

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols ;

identifying a modulation format of the subsequent RF burst based on accumulated channel energies;

comparing the identified modulation format of the subsequent RF burst to the identified modulation format of previous RF bursts of the data frame;

demodulating the subsequent RF burst according to the identified modulation format of the subsequent RF burst; and

discarding the prior RF bursts of the data frame when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of prior RF bursts.

7. (Currently Amended) The method of Claim 1~~5~~, further comprising:

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

identifying a modulation format of the data frame ~~subsequent RF burst~~ based on accumulated channel energies;

comparing the identified modulation format of the data frame ~~subsequent RF burst~~ to the identified modulation format of prior RF bursts of the data frame;

demodulating the subsequent RF burst according to the identified modulation format of the data frame ~~subsequent RF burst~~; and

reprocessing the prior RF bursts of the data frame according to the identified modulation format of the data frame ~~subsequent RF burst~~ when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the prior RF burst.

8. (Currently Amended) A method to identify a modulation format of a data frame transmitted between a servicing base station and a wireless terminal in a cellular wireless communication system, the method comprises:

receiving a first Radio Frequency (RF) burst of the data frame from the servicing base station, wherein the first RF burst carries a plurality of modulated symbols;

extracting a training sequence from the first RF burst, wherein the training sequence comprises modulated symbols;

producing a first channel estimate based on the training sequence assuming a first modulation format;

applying the first channel estimate to a reference training sequence of the first modulation format to produce a first reconstructed training sequence;

comparing the training sequence to the first reconstructed training sequence to produce a first error magnitude result;

producing a second channel estimate based on the training sequence assuming a second modulation format;

applying the second channel estimate to a reference training sequence of the second modulation format to produce a second reconstructed training sequence;

comparing the training sequence to the second reconstructed training sequence to produce a second error magnitude result;

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

processing the training sequence assuming the first modulation format to produce a subsequent first error magnitude;

accumulating the subsequent first error magnitude with the first error magnitude to produce an accumulated first error magnitude;

processing the training sequence assuming the second modulation format to produce a subsequent second error magnitude;

accumulating the subsequent second error magnitude with the second channel energy to produce an accumulated second error magnitude;

determining a smaller accumulated error magnitude from the first accumulated error magnitude and the second accumulated error magnitude; and

identifying the modulation format of the data frame ~~first RF burst~~ as the one corresponding to the smaller error magnitude.

9. (Canceled)

10. (Currently Amended) The method of Claim 8~~9~~, wherein:
the first modulation format is GMSK; and
the second modulation format is 8PSK.

11. (Currently Amended) The method of Claim 8~~9~~, further comprising:

~~receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of symbols modulated according to the unknown modulation format;~~

~~identifying the modulation format of the subsequent RF burst based on the accumulated error magnitudes;~~

~~comparing the identified modulation format of the subsequent RF burst to the identified modulation format of the prior RF bursts of the data frame;~~

~~demodulating the subsequent RF burst according to the identified modulation format of the subsequent RF burst; and~~

discarding the prior RF bursts of the data frame when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the prior RF bursts .

12. (Currently Amended) The method of Claim 8~~9~~, further comprising:

~~receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~identifying a modulation format of the subsequent RF burst;~~

~~comparing the identified modulation format of the subsequent RF burst to the identified modulation format of the prior RF bursts of the data frame;~~

~~demodulating the subsequent RF burst according to the identified modulation format of the subsequent RF burst; and~~

reprocessing the prior RF bursts of the data frame according to the identified modulation format of the data frame ~~subsequent RF burst~~ when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the prior RF bursts.

13. (Original) A wireless terminal that comprises:

a Radio Frequency (RF) front end;

a baseband processor communicatively coupled to the RF front end;

an enCOder/DECoder (CODEC) processing module communicatively coupled to the baseband processor;

wherein, the RF front end, the baseband processor, and the CODEC processing module are operable to:

receive a first Radio Frequency (RF) burst of a data frame from the servicing base station, wherein the first RF burst carries a plurality of symbols modulated according to a modulation format;

extract a training sequence from the first RF burst, wherein the training sequence comprises modulated symbols;

process the training sequence assuming a first modulation format to produce a first channel energy;

process the training sequence assuming a second modulation format to produce a second channel energy;

~~determine a greater channel energy from the first channel energy and the second channel energy;~~

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

process the training sequence assuming the first modulation format to produce a subsequent first channel energy;

accumulate the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;

process the training sequence assuming the second modulation format to produce a subsequent second channel energy;

accumulate the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;

determine a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy; and

identify the modulation format of the data frame ~~first RF burst~~ as a modulation format corresponding to the greater accumulated channel energy.

14. (Currently amended) The wireless terminal of Claim 13, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

derotate the symbols within the training sequence(s) when processing the training sequence(s) assuming the first modulation format to produce the first channel energy; and

derotate the symbols within the training sequence(s) when processing the training sequence(s) assuming the second modulation format to produce the second channel energy.

15. (Original) The wireless terminal of Claim 13, wherein:

the first modulation format is GMSK; and

the second modulation format is 8PSK.

16. (Currently amended) The wireless terminal of Claim 13, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~process the training sequence assuming the first modulation format to produce a subsequent first channel energy;~~

~~accumulate the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;~~

~~process the training sequence assuming the second modulation format to produce a subsequent second channel energy;~~

~~accumulate the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;~~

~~determine a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy;~~

~~identify the modulation format of the subsequent RF burst as corresponding to the greater accumulated channel energy~~; and

discard the first RF burst when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of the first RF burst.

17. (Currently amended) The wireless terminal of Claim 13, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~process the training sequence assuming the first modulation format to produce a subsequent first channel energy;~~

~~accumulate the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;~~

~~process the training sequence assuming the second modulation format to produce a subsequent second channel energy;~~

~~accumulate the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;~~

~~determine a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy;~~

~~identify the modulation format of the subsequent RF burst as corresponding to the greater accumulated channel energy; and~~

reprocess the first RF burst according to the identified modulation format of the data frame ~~subsequent RF burst~~ when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the first RF burst.

18. (Original) The wireless terminal of Claim 13, wherein the wireless terminal operates according to the GSM standard.

19. (Currently Amended) A wireless terminal that comprises:

a Radio Frequency (RF) front end;

a baseband processor communicatively coupled to the RF front end;

wherein, the RF front end and the baseband processor are operable to:

receive a first Radio Frequency (RF) burst of a data frame from the servicing base station, wherein the first RF burst carries a plurality of symbols modulated according to a modulation format;

extract a training sequence from the first RF burst, wherein the training sequence comprises symbols modulated according to the unknown modulation format;

process the training sequence assuming a first modulation format to produce a first channel energy;

process the training sequence assuming a second modulation format to produce a second channel energy;

~~determine a greater channel energy from the first channel energy and the second channel energy;~~

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

process the training sequence assuming the first modulation format to produce a subsequent first channel energy;

accumulate the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;

process the training sequence assuming the second modulation format to produce a subsequent second channel energy;

accumulate the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;

determine a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy;

identify the modulation format of the data frame as the modulation format corresponding to the greater accumulated channel energy.

~~; and~~

~~identify the modulation format of the first RF burst as a modulation format corresponding to the greater channel energy.~~

20. (Original) The wireless terminal of Claim 19, wherein, the RF front end and the baseband processor are operable to:

derotate the symbols within the training sequence when processing the training sequence assuming the first modulation format to produce the first channel energy; and

derotate the symbols within the training sequence when processing the training sequence assuming the second modulation format to produce the second channel energy.

21. (Original) The wireless terminal of Claim 19, wherein:

the first modulation format is GMSK; and

the second modulation format is 8PSK.

22. (Original) The wireless terminal of Claim 19, wherein, the RF front end and the baseband processor are operable to:

process the first RF burst to produce a baseband signal; and

extract the training sequence from the baseband signal.

23. (Original) The wireless terminal of Claim 19, wherein, the RF front end and the baseband processor are operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~process the training sequence assuming the first modulation format to produce a subsequent first channel energy;~~

~~accumulate the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;~~

~~process the training sequence assuming the second modulation format to produce a subsequent second channel energy;~~

~~accumulate the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;~~

~~determine a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy;~~

~~identify the modulation format of the subsequent RF burst as corresponding to the greater accumulated channel energy; and~~

discard the first RF burst when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of the first RF burst.

24. (Original) The wireless terminal of Claim 19, wherein, the RF front end and the baseband processor are operable to:

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols ;

process the training sequence assuming the first modulation format to produce a subsequent first channel energy;

accumulate the subsequent first channel energy with the first channel energy to produce an accumulated first channel energy;

process the training sequence assuming the second modulation format to produce a subsequent second channel energy;

accumulate the subsequent second channel energy with the second channel energy to produce an accumulated second channel energy;

determine a greater accumulated channel energy from the first accumulated channel energy and the second accumulated channel energy;

identify the modulation format of the subsequent RF burst as corresponding to the greater accumulated channel energy; and

reprocess the first RF burst according to the identified modulation format of the subsequent RF burst when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of the first RF burst.

25. (Original) The wireless terminal of Claim 19, wherein the wireless terminal operates according to the GSM standard.

26. (Currently Amended) A wireless terminal that comprises:

a Radio Frequency (RF) front end;

a baseband processor communicatively coupled to the RF front end;

an enCOder/DECoder (CODEC) processing module communicatively coupled to the baseband processor;

wherein, the RF front end, the baseband processor, and the CODEC processing module are operable to:

receive a first Radio Frequency (RF) burst of a data frame from the servicing base station, wherein the first RF burst carries a plurality of symbols modulated according to an unknown modulation format;

extract a training sequence from the first RF burst, wherein the training sequence comprises modulated symbols;

produce a first channel estimate based on the training sequence assuming a first modulation format;

apply the first channel estimate to a reference training sequence of the first modulation format to produce a first reconstructed training sequence;

produce a second channel estimate based on the training sequence assuming a second modulation format;

apply the second channel estimate to a reference training sequence of the second modulation format to produce a second reconstructed training sequence;

compare the training sequence to the first reconstructed training sequence to produce a first error result;

compare the training sequence to the second reconstructed training sequence to produce a second error result;

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

extract a subsequent training sequence from the subsequent RF burst;

apply the first channel estimate to the reference training sequence of the first modulation format to produce a subsequent first reconstructed training sequence;

apply the second channel estimate to the reference training sequence of the second modulation format to produce a subsequent second reconstructed training sequence;

compare the subsequent training sequence to the subsequent first reconstructed training sequence to produce a subsequent first error result;

compare the subsequent training sequence to the subsequent second reconstructed training sequence to produce a second error result;

accumulate the first error result with the subsequent first error result to produce an accumulated first error result;

accumulate the second error result with the subsequent second error result to produce an accumulated second error result;

identify the modulation format of the data frame as the modulation format corresponding to a lesser accumulated error result.

~~identify the modulation format as a modulation format of the first RF burst as corresponding to the reconstructed training sequence having a lesser error result~~.

27. (Original) The wireless terminal of Claim 26, wherein:

the first modulation format is GMSK; and

the second modulation format is 8PSK.

28. (Currently Amended) The wireless terminal of Claim 26, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

process the data frame ~~first RF burst~~ to produce a baseband signal; and

extract the training sequence(s) from the baseband signal.

29. (Currently Amended) The wireless terminal of Claim 26, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~extract a subsequent training sequence from the subsequent RF burst;~~

~~apply the first channel estimate to the reference training sequence of the first modulation format to produce a subsequent first reconstructed training sequence;~~

~~apply the second channel estimate to the reference training sequence of the second modulation format to produce a subsequent second reconstructed training sequence;~~

~~compare the subsequent training sequence to the subsequent first reconstructed training sequence to produce a subsequent first error result;~~

~~compare the subsequent training sequence to the subsequent second reconstructed training sequence to produce a second error result;~~

~~accumulate the first error result with the subsequent first error result to produce an accumulated first error result;~~

~~accumulate the second error result with the subsequent second error result to produce an accumulated second error result;~~

~~identify the modulation format as a modulation format of the subsequent RF burst corresponding to a lesser accumulated error result~~;

discard the first RF burst when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the first RF burst.

30. (Currently Amended) The wireless terminal of Claim 29, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~extract a subsequent training sequence from the subsequent RF burst;~~

~~apply the first channel estimate to the reference training sequence of the first modulation format to produce a subsequent first reconstructed training sequence;~~

~~apply the second channel estimate to the reference training sequence of the second modulation format to produce a subsequent second reconstructed training sequence;~~

~~compare the subsequent training sequence to the subsequent first reconstructed training sequence to produce a subsequent first error result;~~

~~compare the subsequent training sequence to the subsequent second reconstructed training sequence to produce a second error result;~~

~~accumulate the first error result with the subsequent first error result to produce an accumulated first error result;~~

~~accumulate the second error result with the subsequent second error result to produce an accumulated second error result;~~

~~identify the modulation format as a modulation format of the subsequent RF burst corresponding to a lesser accumulated error result;~~

reprocess the first RF burst according to the identified modulation format of the data frame ~~subsequent RF burst~~ when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to the identified modulation format of the first RF burst.

31. (Original) The wireless terminal of Claim 26, wherein the wireless terminal operates according to the GSM standard.

32. (Currently Amended) A wireless terminal that comprises:

a Radio Frequency (RF) front end;

a baseband processor communicatively coupled to the RF front end;

wherein, the RF front end and the baseband processor are operable to:

receive a first Radio Frequency (RF) burst of a data frame from the servicing base station, wherein the first RF burst carries a plurality of symbols modulated according to an unknown modulation format;

extract a training sequence from the first RF burst, wherein the training sequence comprises symbols modulated according to the unknown modulation format;

produce a first channel estimate based on the training sequence assuming a first modulation format;

apply the first channel estimate to a reference training sequence of the first modulation format to produce a first reconstructed training sequence;

produce a second channel estimate based on the training sequence assuming a second modulation format;

apply the second channel estimate to a reference training sequence of the second modulation format to produce a second reconstructed training sequence;

compare the training sequence to the first reconstructed training sequence to produce a first error result;

compare the training sequence to the second reconstructed training sequence to produce a second error result;

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

extract a subsequent training sequence from the subsequent RF burst;

apply the first channel estimate to the reference training sequence of the first modulation format to produce a subsequent first reconstructed training sequence;

apply the second channel estimate to the reference training sequence of the second modulation format to produce a subsequent second reconstructed training sequence;

compare the subsequent training sequence to the subsequent first reconstructed training sequence to produce a subsequent first error result;

compare the subsequent training sequence to the subsequent second reconstructed training sequence to produce a second error result;

accumulate the first error result with the subsequent first error result to produce an accumulated first error result;

accumulate the second error result with the subsequent second error result to produce an accumulated second error result;

identify the modulation format of the data frame as a modulation format ~~of the first RF burst as~~ corresponding to the reconstructed training sequence having a lesser error result.

33. (Original) The wireless terminal of Claim 32, wherein:

the first modulation format is GMSK; and

the second modulation format is 8PSK.

34. (Currently Amended) The wireless terminal of Claim 32, wherein, the RF front end and the baseband processor are operable to:

process the ~~first~~ RF burst(s) to produce a baseband signal; and

extract the training sequence from the baseband signal.

35. (Currently Amended) The wireless terminal of Claim 32, wherein, the RF front end and the baseband processor are operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~extract a subsequent training sequence from the subsequent RF burst;~~

~~apply the first channel estimate to the reference training sequence of the first modulation format to produce a subsequent first reconstructed training sequence;~~

~~apply the second channel estimate to the reference training sequence of the second modulation format to produce a subsequent second reconstructed training sequence;~~

~~compare the subsequent training sequence to the subsequent first reconstructed training sequence to produce a subsequent first error result;~~

~~compare the subsequent training sequence to the subsequent second reconstructed training sequence to produce a second error result;~~

~~accumulate the first error result with the subsequent first error result to produce an accumulated first error result;~~

~~accumulate the second error result with the subsequent second error result to produce an accumulated second error result;~~

~~identify the modulation format as a modulation format of the subsequent RF burst corresponding to a lesser accumulated error result;~~

discard the first RF burst when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the first RF burst .

36. (Currently Amended) The wireless terminal of Claim 32, wherein, the RF front end and the baseband processor are operable to:

~~receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;~~

~~extract a subsequent training sequence from the subsequent RF burst;~~

~~apply the first channel estimate to the reference training sequence of the first modulation format to produce a subsequent first reconstructed training sequence;~~

~~apply the second channel estimate to the reference training sequence of the second modulation format to produce a subsequent second reconstructed training sequence;~~

~~compare the subsequent training sequence to the subsequent first reconstructed training sequence to produce a subsequent first error result;~~

~~compare the subsequent training sequence to the subsequent second reconstructed training sequence to produce a second error result;~~

~~accumulate the first error result with the subsequent first error result to produce an accumulated first error result;~~

~~accumulate the second error result with the subsequent second error result to produce an accumulated second error result;~~

~~identify the modulation format as a modulation format of the subsequent RF burst corresponding to a lesser accumulated error result;~~

reprocess the first RF burst according to the identified modulation format of the data frame ~~subsequent RF burst~~ when the identified modulation format of the data frame ~~subsequent RF burst~~ compares unfavorably to an identified modulation format of the first RF burst.

37. (Original) The wireless terminal of Claim 32, wherein the wireless terminal operates according to the GSM standard.